REMARKS

This submission is made in response to the Non-Final Office Action dated February 28, 2006. Claims 1, 3-10 and 12-19 are currently pending for examination, of which claims 1, 9, 10, 18 and 19 are independent; the remaining claims are dependent claims. In response Applicants have filed herewith an Amendment and have amended independent claims 1, 9, 10, 18 and 19. Support for these amendments can be found on page 8 lines 4-7 of the specification. Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Examiner is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the foregoing amendments and following remarks. Applicants intend no change in the scope of the claims by the changes made by this amendment. It should be noted these amendments are not in acquiescence of the Office's position on allowability of the claims, but merely to expedite prosecution.

Rejection of Claims 1, 3-10 and 12-19
under 35 U.S.C. Sec. 102(e) based upon Parthasary ('192):

Claims 1, 3-10 and 12-19 stand rejected as being anticipated by U.S. Patent 5,913,192 to Parthasary et al. (hereinafter Par ('192)) under 35 U.S.C. Sec. 102(e).

Broadly, at presently understood, Par ('192) discloses a system/method for identifying a speaker reciting a selected password phrase into an identification system. This system breaks the spoken phrase down phonetically through a speaker independent phrase recognizer and compares the N most recognizable phonetic segments of the phrase against an internal database of phonetic segments contained within a collection of

password phrases. The system then compares the recited password phrase against each individual stored password phrase to generate a speaker independent comparison score for each stored password phrase to determine what stored password phrases are most like the recited password phrase based on the N most recognized phonetic segments. The system then determines the N best stored password phrase candidates and forwards these N best stored password phrase candidates onto a speaker dependent phrase recognizer which compares the password phrase being analyzed against a Hidden Markov Model (HMM) of each of the N best stored password phrase candidates forwarded to the speaker dependent phrase recognizer. The speaker dependent phrase recognizer then generates a speaker dependent comparison score for each of the N best stored password phrase candidates. The speaker independent comparison scores and speaker dependent comparison scores for each of the N best stored password phrase candidates are then sent to a score processor which combines these scores and determines which of the N best stored password phrase candidates is most likely to belong to the person seeking to achieve access. The combined comparison score for this best password phrase candidate is then sent to a verifier which determines whether the combined comparison is high enough to allow access to a database (Fig. 2, col. 2 line 50-col. 5 line 61).

Applicants' current invention, on the other hand, analyzes a spoken identity claim by determining a target discriminant based on the claim and a target model relating to a target individual, i.e., the individual whose identity claim is being analyzed, and a background discriminant based on the identity claim and a background model relating to background individual(s). Comparison scores based upon both the target discriminant

and the background discriminant are then generated and added together to create a cumulative score which is analyzed to verify access for the speaker of the identity claim.

Applicants respectfully submit that a claim is anticipated under Section 102 only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference (MPEP § 2131). Applicants respectfully submit that the disclosure in Par ('192) is not sufficient anticipate independent claims 1, 9, 10, 18 and 19 under Sec. 102.

With regards to independent claims 1, 9, 10, 18 and 19, the claims, as amended, recite the method step of or an element for determining a background discriminant based on an identity claim and a background model relating to at least one background individual where the background discriminant is determined as a target-dependent function of individual voiceprint-based discriminants in a background profile, with a score being determined from this background discriminant. Par ('192) discloses a system where a password phrase recited into the system is broken down into phonetic segments and compared to each stored password phrase in a lexicon database to generate a number of likely candidate password phrases stored within the system based on this phonetically based speaker independent comparison. A Hidden Markov Model based speaker dependent comparison is then made between the recited password phrase and each of the likely candidate password phrases to determine the best candidate password phrase and the score for this particular candidate password phrase is verified to grant or deny access to the speaker of the recited password phrase. Applicants respectfully submit that the system of Par ('192) does not generate or utilize a background discriminant as claimed. Rather the system of Par ('192) merely compares a recited password to a database of

individual stored password phrases based on phonetic segmentation to generate a list of likely password phrases stored within the system that may be the same as the recited password phrase. This is not the generation of a background model as the Examiner contends but the generation of a list of stored password phrases with the recited password phrase being compared against each individual likely password phrase. Rather than generating a background model, as is claimed, the system of Par ('192) makes a series of individual comparisons used to generate a series of comparison scores. Even if one were to consider the system of Par ('192) as utilizing some type of background discriminant one could only point to the database of phonetically segmented stored password phrases as serving as the basis for determining such a discriminant. In contrast to the currently claimed background discriminant this database serves as a basis for analyzing all of the password phrases recited into the system for verification. This database in the system of Par ('192) cannot serve as the basis of **target-specific** background discriminants. Moreover, this database is made up of phonetic segments, not voiceprints. The determination of such a supposed background discriminant could only be based on phonetic segmentation of a recited password and not as a function of **voiceprint-based discriminants**. Claims 1, 9, 10, 18 and 19 are allowable over Par ('192) for at least the foregoing reasons. Applicants respectfully request that the Examiner withdraw the rejections of claims 1, 9, 10, 18 and 19 for being anticipated by Par ('192) under Section 102(e).

Claims 3-8 and 12-17 are all dependent claims depending from the independent claims previously discussed and as such are allowable over Par ('192) for at least the same reasons as the previously discussed independent claims. Applicants respectfully

request that the Examiner withdraw the rejections of claims 3-8 and 12-17 for being anticipated by Par ('192) under Sec. 102(e).

Rejection of Claims 1, 3-10 and 12-19 under 35 U.S.C. Sec. 102(e) based upon Parthasary ('555):

Claims 1, 3-10 and 12-19 stand rejected as being anticipated by U.S. Patent 6,233,555 to Parthasary et al. (hereinafter Par ('555)) under 35 U.S.C. Sec. 102(e).

Broadly, as presently understood, Par ('555) discloses a speaker identification method/system using a mixture discriminant analysis to develop speaker models for identifying a speaker reciting a password sentence into the identification system. The system of Par ('555) operates in three phases: enrollment, training and identification. During the enrollment phase a new password utterance is input into the system and then segmented into individual phones. The phone and the speaker's features for that phone are then stored. During the training phase the system analyzes the individual phones recited into the system and the features for that particular phone from all the users in the enrolled group. The system then computes a Gaussian mixture model for that particular phone based on the features of all the user's in the group to generate a transformed model for each enrolled user's password utterance. During the identification phase a user recites a password utterance into the system, which then segments the uttered phrase by phones and extracts the speaker's features for each of those phones. The system then compares the recited phones and the speaker's features to the transformed model for the enrolled password utterance that has been received and performs a likelihood estimation to develop frame-level likelihood scores. Thresholding is then performed on these scores and the threshold scores are input into a score combiner to develop utterance scores.

These utterance scores and then analyzed to confirm or reject the validity of the recited password utterance (Figs. 1-12, col. 2 line 36-col. 3 line 67, and col. 5 line 9-col. 7 line 5).

Applicants' current invention, on the other hand, analyzes a spoken identity claim by determining a target discriminant based on the claim and a target model relating to a target individual, i.e., the individual whose identity claim is being analyzed, and a background discriminant based on the identity claim and a background model relating to background individual(s). Comparison scores based upon both the target discriminant and the background discriminant are then generated and added together to create a cumulative score which is analyzed to verify access for the speaker of the identity claim.

Applicants respectfully submit that a claim is anticipated under Section 102 only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference (MPEP § 2131). Applicants respectfully submit that the disclosure in Par ('555) is not sufficient anticipate independent claims 1, 9, 10, 18 and 19 under Sec. 102.

With regards to independent claims 1, 9, 10, 18 and 19, the claims, as amended, recite the method steps of or elements for determining target discriminant based on an identity claim and at least one target model relating to a target individual and a background discriminant based on an identity claim and a background model relating to at least one background individual where the background discriminant is determined as a target-dependent function of individual voiceprint-based discriminants in a background profile, with a score being determined from this background discriminant. Par ('555)

discloses a transformed model for each speaker and password utterance computed by analyzing the features and segmented phones for every password utterance recited into the system during the enrollment phase and processing these features and phones through a Gaussian mixture model. During identification the recited password utterance received by the system is broken down by phone and speaker feature for each phone and compared against the transformed model for that password utterance generated by the system during the training phase to develop a score that is then analyzed to confirm or reject the validity of the recited password utterance (Figs. 7-9 & 12, col. 5 line 9-col. 7 line 5). Applicants respectfully submit that Par ('555) does not disclose a system or method for providing authentication as is currently claimed. Even if one could properly categorize the transformed model of Par ('555) as a background model for determining a background discriminant, as the Examiner contends, the Examiner fails to point out any features disclosed in Par ('555) that serve to determine a target discriminant. The Examiner contends that step 1220 depicted in Fig. 12 and described in column 6 lines 59-65 corresponds to the determination of a target discriminant. Applicants respectfully submit that step 1220 does not depict or describe a determination of a target discriminant. This step merely involves the segmentation of a password utterance recited into the system for verification into a string of individual phones and features. These phones and features obtained from the recited password utterance are then compared to the transformed model generated by the system for an enrolled user's password utterance (i.e., step 1230 depicted in Fig. 12, which the Examiner contends to be the determination of a background discriminant). Par ('555) does not disclose the determination of two individual (target and background) discriminants that are then scored as is currently

claimed. Rather, Par ('555) discloses an authentication analysis based on only one model. This model is seemingly generated for an individual speaker and password utterance segmented by phone based on a regression analysis of all the password utterances segmented by phone and speaker features input into the system by an enrolled group of users. This model cannot serve as the basis for the determination of both target and background discriminants as is currently claimed. Moreover, any discriminant determined by the system of Par ('555) is a function of phonetic segmentation and feature not as a target-dependent function of individual **voiceprint-based** discriminants contained in a background profile, as is currently claimed. Claims 1, 9, 10, 18 and 19 are allowable over Par ('555) for at least the foregoing reasons. Applicants respectfully request that the Examiner withdraw the rejections of claims 1, 9, 10, 18 and 19 for being anticipated by Par ('555) under Sec. 102(e).

Claims 3-8 and 12-17 are all dependent claims depending from the independent claims previously discussed and as such are allowable over Par ('555) for at least the same reasons as the previously discussed independent claims. Applicants respectfully request that the Examiner withdraw the rejections of claims 3-8 and 12-17 for being anticipated by Par ('555) under Sec. 102(e).

In view of the foregoing, it is respectfully submitted that Claims 1, 9, 10, 18, and 19 fully distinguish over the applied art and are thus in condition for allowance. It is also respectfully submitted, dependent Claims 3-8 and 12-17 are also in condition for allowance.

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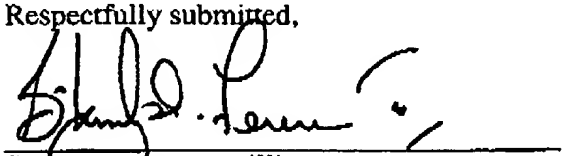
(590.013)

The "prior art made of record" has been reviewed. Applicants acknowledge that such prior art was not deemed by the Office to be sufficiently relevant to have been applied against the claims of the instant application. To the extent that the Office may apply such prior art against the claims in the future, Applicants will be fully prepared to respond thereto.

In summary, Claims 1, 3-10, and 12-19, are fully distinguishable over the applied art and immediately allowable. Notice to the effect is hereby earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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